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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/652,260	08/29/2003	Jyoti Mazumder	POM-13402/29	1953
25006	7590	02/15/2005	EXAMINER	
GIFFORD, KRASS, GROH, SPRINKLE & CITKOWSKI, P.C PO BOX 7021 TROY, MI 48007-7021			RAO, SHEELA S	
			ART UNIT	PAPER NUMBER

2125

DATE MAILED: 02/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/652,260

Applicant(s)

MAZUMDER ET AL.

Examiner

Sheela Rao

Art Unit

2125

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 January 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>10/29/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-7 are pending and presented for examination.
2. Applicant's submission of references on form PTO-1449, filed October 29, 2003, has been considered. A signed copy of the form is attached.

Drawings

3. The drawings were received on January 21, 2004. These drawings are acceptable.
4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "tool", "base", "numerical control system", "deposition head", "heating beam", "material supply feed", "numerically controlled robot", "optical sensors", must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character number "12" has been used to designate both the base and a substrate. Corrected drawing

sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheeta should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

6. The disclosure is objected to because of the following informalities:

- The specification indicates a Figure 5 in the brief and detailed description sections; however, no such drawing has been submitted.
- At line 17 on page 5 of the disclosure, reference number 14 has been cited, yet the drawing to which it is referring is not known.
- At line 16 on page 5 of the disclosure, reference number 12 is indicated as being the base. Examiner interprets the figure that this paragraph is describing to be Fig. 2, but there is no element being referenced by number 12 in figure 2.
- On page 5 at line 20, "metal engaging surfaces" is stated; however, where or what this surface is not clearly identified.
- On page 6 at line 6 "direct deposition head" is stated but location of this head is not known.
- At lines 11 and 12 on page 6, the use of sensors and the generation of a signal is implied, however where the sensors are located or how they will operate is not disclosed.
- The paragraph beginning at line 13 on page 6, begins to explain figure 4. yet the claimed aspect of the invention is not clearly identified or explained. The paragraph states that the numerical controls system is "not shown". A substrate, 12, is said to be moved by the NC system, yet in the previous figure, 12 is used to label the work piece. Additionally, at line 18,

the deposition head is once again stated, but what the Applicant considers to be this head is not known. Furthermore, "a programmed manner" is indicated and again no reference to the how and what will undertake the programming has been defined.

- With regard to lines 1-8 on page 7, as aforementioned a figure numbered 5 has not been presented, thus the Examiner is not able to verify the presence of the elements on such drawing.
- As per the paragraph beginning at line 13, it is not at all clear as to what Applicant is describing.

Appropriate correction is required.

Claim Objections

7. Claims 3, 5, and 7 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claims 3, 5, and 7 are written as "[t]he method ..." yet they are all claiming machinery or products that are used to carry out methodologies, not a process itself. In particular, instant claim 3 requires a work contacting area for the tool. Instant claim 5 calls for the use of a numerically controlled robot to support the deposition head. In instant claim 7, the use of optical sensors is claimed.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 1-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

There seems to be a lack of connection in the parts of the instant claims. Claim 1 begins by reciting steps for a method to form a tool and then jumps (line 6) to introduce specific hardware that would typically be in a system environment but the hardware is not related back to the steps of the method. The method that is in the instant claims are responsible to complete actions within a system; therefore, a system is necessary for establishing a method. The system that is mentioned IS the basis of the environment for the method but a method is not always needed for a system to be used, i.e. a system can exist without the use of a method.

10. Claims 1-7 recite limitations where there is insufficient antecedent basis for the limitation within the claim language.

Claims 1-7: "The method ...";

Claim 1: "the working surfaces", and "the process parameters";

Claim 2: "the working space";

Claim 5: "the wrist of a numerically controlled robot";

Appropriate correction is required.

11. The terms "relatively" and "desired" in claim 1 are relative terms which render the claim indefinite. The terms "relatively" and "desired" are not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably appraised of the scope of the invention.

When a word of degree is used as a limitation, it is necessary to determine whether the specification provides some standard for measuring that degree. See *Seattle Box Company, Inc. V. Industrial Crating & Packing, Inc.*, 731 F.2d 818, 221 USPQ 568 (Fed. Cir. 1984). In this case, the specification does not enable one skilled in the art to reasonably establish what may be construed as being within the metes and bounds of the word of degree. Therefore, one of ordinary skill in the art would not be appraised as to the claimed invention's scope when the claims are read in light of the specification. See *Ex parte Oetiker*, 23 USPQ2d 1641.

Claim Rejections - 35 USC § 102

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

13. Claims 1-7 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Koch et al. in USPN 6,122,564.

The reference of prior art to Koch et al. teaches a method and apparatus for forming deposits of molten metal on the surface of a work piece using a laser beam. The disclosure of the patented invention teaches the limitations of instant claim 1 beginning at line 30 in column 3 as well as the drawings of Figures 2 and 3. The use of an alloy powder as in instant claim 2, Koch teaches the feeding material to be a powder so as to create a deposit having physical dimensions (see col. 2: ll. 1-4 and ll. 42-44. Instant claim 3 claims the use of a die cast die as the tool, as per the description of Figure 12 of the patented reference, a metal tool die having core and cavity parts is use according to a method of the invention. With regard to instant claim 4, the disclosure of Koch et al. uses a chromium-molybdenum material in an example of the patented method and apparatus as stated line 17, et seq. of column 8. Koch et al. continue by describing the use of robots in operating equipments within metal working plants, as that in instant claim 5 (see col. 5: ll. 2-20). Patented claim 4 claims the interface to a computer aided design system wherein a feedback controller is used for operative purposes proving similarity to the closed loop process of instant claim 6. Finally, with regard to the optical sensors as per instant claim 7, Koch et al. clearly state the use of optoelectric sensors in conjunction with a feedback controller to adjust the laser, see col. 2: ll. 4-9).

For the reasons stated above, the limitations of the claimed invention is taught by the prior arts of record; thereby, rendering the instant claims unpatentable.

Conclusion

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheela Rao whose telephone number is (571) 272-3751. The examiner can normally be reached Monday - Friday from 9:00 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Picard, can be reached on (571) 272-3749.

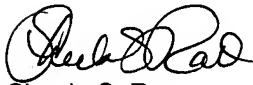
Any response to this action should be mailed to:

**Commissioner of Patents and Trademarks
Washington, D.C. 20231**

or faxed to:

(703) 305-3718 for Official Communications

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.



Sheela S. Rao
February 11, 2005



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